

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/575,279
Source: IFW
Date Processed by STIC: 1/29/07

ENTERED

CRF Errors Edited by the STIC Systems Branch

Serial Number: 10/575,279

CRF Edit Date: 6/26/07

Edited by: [Signature]

___ Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line

___ Corrected the SEQ ID NO. Sequence numbers edited were:

___ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

___ Deleted: ___ invalid beginning/end-of-file text ; ___ page numbers

___ Inserted mandatory headings/numeric identifiers, specifically:

___ Moved responses to same line as heading/numeric identifier, specifically:

✓ Other:

deleted invalid Alpha numeric
headings for prior Application Number.



IFWO

RAW SEQUENCE LISTING

DATE: 01/26/2007

PATENT APPLICATION: US/10/575,279

TIME: 09:30:36

Input Set : A:\pto.kd.txt

Output Set: N:\CRF4\01262007\J575279.raw

3 <110> APPLICANT: The UAB Research Foundation

4 Oomens, Tom

5 Megaw, Alexander

6 Wertz, Gail

8 <120> TITLE OF INVENTION: RECOMBINANT VIRUSES WITH HETEROLOGOUS ENVELOPE

PROTEINS

10 <130> FILE REFERENCE: 057909-012001

C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/575,279

C--> 12 <141> CURRENT FILING DATE: 2006-04-11

12 <150> PRIOR APPLICATION NUMBER: 60/588,379

13 <151> PRIOR FILING DATE: 2004-07-16

15 <150> PRIOR APPLICATION NUMBER: 60/528,214

16 <151> PRIOR FILING DATE: 2003-12-10

18 <150> PRIOR APPLICATION NUMBER: 10/262,238

19 <151> PRIOR FILING DATE: 2002-10-01

21 <150> PRIOR APPLICATION NUMBER: 60/397,289

22 <151> PRIOR FILING DATE: 2002-07-19

24 <150> PRIOR APPLICATION NUMBER: 60/326,259

25 <151> PRIOR FILING DATE: 2001-10-01

27 <160> NUMBER OF SEQ ID NOS: 4

29 <170> SOFTWARE: PatentIn version 3.2

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32 <211> LENGTH: 7

33 <212> TYPE: PRT

34 <213> ORGANISM: Autographa californica nucleopolyhedrovirus

36 <400> SEQUENCE: 1

38 Arg Asn Arg Asn Arg Gln Tyr

39 1 5

42 <210> SEQ ID NO: 2

43 <211> LENGTH: 15

44 <212> TYPE: PRT

45 <213> ORGANISM: Human respiratory syncytial virus

47 <400> SEQUENCE: 2

49 Ser Arg Arg Gln Leu Ser Gly Ile Asn Asn Ile Ala Phe Ser Asn

50 1 5 10 15

53 <210> SEQ ID NO: 3

54 <211> LENGTH: 574

55 <212> TYPE: PRT

56 <213> ORGANISM: Human respiratory syncytial virus

58 <400> SEQUENCE: 3

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61 1 5 10 15

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65 20 25 30

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Input Set : A:\pto.kd.txt

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76 Lys Glu Asn Lys Cys Asn Gly Thr Asp Ala Lys Val Lys Leu Ile Lys
77 65          70          75          80
80 Gln Glu Leu Asp Lys Tyr Lys Asn Ala Val Thr Glu Leu Gln Leu Leu
81          85          90          95
84 Met Gln Ser Thr Pro Pro Thr Asn Asn Arg Ala Arg Arg Glu Leu Pro
85          100          105          110
88 Arg Phe Met Asn Tyr Thr Leu Asn Asn Ala Lys Lys Thr Asn Val Thr
89          115          120          125
92 Leu Ser Lys Lys Arg Lys Arg Phe Leu Gly Phe Leu Leu Gly Val
93          130          135          140
96 Gly Ser Ala Ile Ala Ser Gly Val Ala Val Ser Lys Val Leu His Leu
97 145          150          155          160
100 Glu Gly Glu Val Asn Lys Ile Lys Ser Ala Leu Leu Ser Thr Asn Lys
101          165          170          175
104 Ala Val Val Ser Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val
105          180          185          190
108 Leu Asp Leu Lys Asn Tyr Ile Asp Lys Gln Leu Leu Pro Ile Val Asn
109          195          200          205
112 Lys Gln Ser Cys Ser Ile Ser Asn Ile Glu Thr Val Ile Glu Phe Gln
113          210          215          220
116 Gln Lys Asn Asn Arg Leu Leu Glu Ile Thr Arg Glu Phe Ser Val Asn
117 225          230          235          240
120 Ala Gly Val Thr Thr Pro Val Ser Thr Tyr Met Leu Thr Asn Ser Glu
121          245          250          255
124 Leu Leu Ser Leu Ile Asn Asp Met Pro Ile Thr Asn Asp Gln Lys Lys
125          260          265          270
128 Leu Met Ser Asn Asn Val Gln Ile Val Arg Gln Gln Ser Tyr Ser Ile
129          275          280          285
132 Met Ser Ile Ile Lys Glu Glu Val Leu Ala Tyr Val Val Gln Leu Pro
133          290          295          300
136 Leu Tyr Gly Val Ile Asp Thr Pro Cys Trp Lys Leu His Thr Ser Pro
137 305          310          315          320
140 Leu Cys Thr Thr Asn Thr Lys Glu Gly Ser Asn Ile Cys Leu Thr Arg
141          325          330          335
144 Thr Asp Arg Gly Trp Tyr Cys Asp Asn Ala Gly Ser Val Ser Phe Phe
145          340          345          350
148 Pro Gln Ala Glu Thr Cys Lys Val Gln Ser Asn Arg Val Phe Cys Asp
149          355          360          365
152 Thr Met Asn Ser Leu Thr Leu Pro Ser Glu Ile Asn Leu Cys Asn Val
153          370          375          380
156 Asp Ile Phe Asn Pro Lys Tyr Asp Cys Lys Ile Met Thr Ser Lys Thr
157 385          390          395          400
160 Asp Val Ser Ser Ser Val Ile Thr Ser Leu Gly Ala Ile Val Ser Cys
161          405          410          415
164 Tyr Gly Lys Thr Lys Cys Thr Ala Ser Asn Lys Asn Arg Gly Ile Ile

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DATE: 01/26/2007

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Input Set : A:\pto.kd.txt

Output Set: N:\CRF4\01262007\J575279.raw

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168 Lys Thr Phe Ser Asn Gly Cys Asp Tyr Val Ser Asn Lys Gly Met Asp
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172 Thr Val Ser Val Gly Asn Thr Leu Tyr Tyr Val Asn Lys Gln Glu Gly
173           450           455           460
176 Lys Ser Leu Tyr Val Lys Gly Glu Pro Ile Ile Asn Phe Tyr Asp Pro
177 465           470           475           480
180 Leu Val Phe Pro Ser Asp Glu Phe Asp Ala Ser Ile Ser Gln Val Asn
181           485           490           495
184 Glu Lys Ile Asn Gln Ser Leu Ala Phe Ile Arg Lys Ser Asp Glu Leu
185           500           505           510
188 Leu His Asn Val Asn Ala Gly Lys Ser Thr Thr Asn Ile Met Ile Thr
189           515           520           525
192 Thr Ile Ile Ile Val Ile Ile Val Ile Leu Leu Ser Leu Ile Ala Val
193           530           535           540
196 Gly Leu Leu Leu Tyr Cys Lys Ala Arg Ser Thr Pro Val Thr Leu Ser
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204 <210> SEQ ID NO: 4
205 <211> LENGTH: 511
206 <212> TYPE: PRT
207 <213> ORGANISM: Vesicular stomatitis virus
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215 Lys Phe Thr Ile Val Phe Pro His Asn Gln Lys Gly Asn Trp Lys Asn
216           20           25           30
219 Val Pro Ser Asn Tyr His Tyr Cys Pro Ser Ser Ser Asp Leu Asn Trp
220           35           40           45
223 His Asn Asp Leu Ile Gly Thr Ala Ile Gln Val Lys Met Pro Lys Ser
224           50           55           60
227 His Lys Ala Ile Gln Ala Asp Gly Trp Met Cys His Ala Ser Lys Trp
228 65           70           75           80
231 Val Thr Thr Cys Asp Phe Arg Trp Tyr Gly Pro Lys Tyr Ile Thr Gln
232           85           90           95
235 Ser Ile Arg Ser Phe Thr Pro Ser Val Glu Gln Cys Lys Glu Ser Ile
236           100          105          110
239 Glu Gln Thr Lys Gln Gly Thr Trp Leu Asn Pro Gly Phe Pro Pro Gln
240           115          120          125
243 Ser Cys Gly Tyr Ala Thr Val Thr Asp Ala Glu Ala Val Ile Val Gln
244           130          135          140
247 Val Thr Pro His His Val Leu Val Asp Glu Tyr Thr Gly Glu Trp Val
248 145          150          155          160
251 Asp Ser Gln Phe Ile Asn Gly Lys Cys Ser Asn Tyr Ile Cys Pro Thr
252           165          170          175
255 Val His Asn Ser Thr Thr Trp His Ser Asp Tyr Lys Val Lys Gly Leu
256           180          185          190
259 Cys Asp Ser Asn Leu Ile Ser Met Asp Ile Thr Phe Phe Ser Glu Asp

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Input Set : A:\pto.kd.txt

Output Set: N:\CRF4\01262007\J575279.raw

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263 Gly Glu Leu Ser Ser Leu Gly Lys Glu Gly Thr Gly Phe Arg Ser Asn			
264 210	215	220	
267 Tyr Phe Ala Tyr Glu Thr Gly Gly Lys Ala Cys Lys Met Gln Tyr Cys			
268 225	230	235	240
271 Lys His Trp Gly Val Arg Leu Pro Ser Gly Val Trp Phe Glu Met Ala			
272 245	250	255	
275 Asp Lys Asp Leu Phe Ala Ala Ala Arg Phe Pro Glu Cys Pro Glu Gly			
276 260	265	270	
279 Ser Ser Ile Ser Ala Pro Ser Gln Thr Ser Val Asp Val Ser Leu Ile			
280 275	280	285	
283 Gln Asp Val Glu Arg Ile Leu Asp Tyr Ser Leu Cys Gln Glu Thr Trp			
284 290	295	300	
287 Ser Lys Ile Arg Ala Gly Leu Pro Ile Ser Pro Val Asp Leu Ser Tyr			
288 305	310	315	320
291 Leu Ala Pro Lys Asn Pro Gly Thr Gly Pro Ala Phe Thr Ile Ile Asn			
292 325	330	335	
295 Gly Thr Leu Lys Tyr Phe Glu Thr Arg Tyr Ile Arg Val Asp Ile Ala			
296 340	345	350	
299 Ala Pro Ile Leu Ser Arg Met Val Gly Met Ile Ser Gly Thr Thr Thr			
300 355	360	365	
303 Glu Arg Glu Leu Trp Asp Asp Trp Ala Pro Tyr Glu Asp Val Glu Ile			
304 370	375	380	
307 Gly Pro Asn Gly Val Leu Arg Thr Ser Ser Gly Tyr Lys Phe Pro Leu			
308 385	390	395	400
311 Tyr Met Ile Gly His Gly Met Leu Asp Ser Asp Leu His Leu Ser Ser			
312 405	410	415	
315 Lys Ala Gln Val Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln			
316 420	425	430	
319 Leu Pro Asp Asp Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys			
320 435	440	445	
323 Asn Pro Ile Glu Leu Val Glu Gly Trp Phe Ser Ser Trp Lys Ser Ser			
324 450	455	460	
327 Ile Ala Ser Phe Phe Phe Ile Ile Gly Leu Ile Ile Gly Leu Phe Leu			
328 465	470	475	480
331 Val Leu Arg Val Gly Ile His Leu Cys Ile Lys Leu Lys His Thr Lys			
332 485	490	495	
335 Lys Arg Gln Ile Tyr Thr Asp Ile Glu Met Asn Arg Leu Gly Lys			
336 500	505	510	

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/575,279

DATE: 01/26/2007

TIME: 09:30:37

Input Set : A:\pto.kd.txt

Output Set: N:\CRF4\01262007\J575279.raw

L:12 M:270 C: Current Application Number differs, Replaced Current Application No

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date

**Raw Sequence Listing before editing
(for reference only)**



IFWO

RAW SEQUENCE LISTING

DATE: 01/19/2007

PATENT APPLICATION: US/10/575,279

TIME: 16:41:43

Input Set : A:\Sequence Listing.ST25.txt

Output Set: N:\CRF4\01192007\J575279.raw

3 <110> APPLICANT: The UAB Research Foundation
 4 Oomens, Tom
 5 Megaw, Alexander
 6 Wertz, Gail
 8 <120> TITLE OF INVENTION: RECOMBINANT VIRUSES WITH HETEROLOGOUS ENVELOPE PROTEINS
 10 <130> FILE REFERENCE: 057909-012001
 C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/575,279 *deleted*
 C--> 12 <141> CURRENT FILING DATE: 2006-04-11
 12 <150> PRIOR APPLICATION NUMBER: U.S. Provisional Patent Application Serial No. 60/588,379 *deleted*
 13 <151> PRIOR FILING DATE: 2004-07-16
 15 <150> PRIOR APPLICATION NUMBER: U.S. Provisional Patent Application Serial No. 60/528,214 *deleted*
 16 <151> PRIOR FILING DATE: 2003-12-10
 18 <150> PRIOR APPLICATION NUMBER: U.S. Patent Application Serial No. 10/262,238 *deleted*
 19 <151> PRIOR FILING DATE: 2002-10-01
 21 <150> PRIOR APPLICATION NUMBER: U.S. Provisional Patent Application Serial No. 60/397,289 *deleted*
 22 <151> PRIOR FILING DATE: 2002-07-19
 24 <150> PRIOR APPLICATION NUMBER: U.S. Provisional Patent Application Serial No. 60/326,259 *deleted*
 25 <151> PRIOR FILING DATE: 2001-10-01
 27 <160> NUMBER OF SEQ ID NOS: 4
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 31 <210> SEQ ID NO: 1
 32 <211> LENGTH: 7
 33 <212> TYPE: PRT
 34 <213> ORGANISM: Autographa californica nucleopolyhedrovirus
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 39 1 5
 42 <210> SEQ ID NO: 2
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 44 <212> TYPE: PRT
 45 <213> ORGANISM: Human respiratory syncytial virus
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 54 <211> LENGTH: 574
 55 <212> TYPE: PRT
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 (pg.1)

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64	Ala	Val	Thr	Phe	Cys	Phe	Ala	Ser	Gly	Gln	Asn	Ile	Thr	Glu	Glu	Phe
65				20					25					30		

RAW SEQUENCE LISTING

DATE: 01/19/2007

PATENT APPLICATION: US/10/575,279

TIME: 16:41:43

Input Set : A:\Sequence Listing.ST25.txt

Output Set: N:\CRF4\01192007\J575279.raw

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73      50              55              60
76 Lys Glu Asn Lys Cys Asn Gly Thr Asp Ala Lys Val Lys Leu Ile Lys
77 65              70              75              80
80 Gln Glu Leu Asp Lys Tyr Lys Asn Ala Val Thr Glu Leu Gln Leu Leu
81      85              90              95
84 Met Gln Ser Thr Pro Pro Thr Asn Asn Arg Ala Arg Arg Glu Leu Pro
85      100             105             110
88 Arg Phe Met Asn Tyr Thr Leu Asn Asn Ala Lys Lys Thr Asn Val Thr
89      115             120             125
92 Leu Ser Lys Lys Arg Lys Arg Arg Phe Leu Gly Phe Leu Leu Gly Val
93      130             135             140
96 Gly Ser Ala Ile Ala Ser Gly Val Ala Val Ser Lys Val Leu His Leu
97 145             150             155             160
100 Glu Gly Glu Val Asn Lys Ile Lys Ser Ala Leu Leu Ser Thr Asn Lys
101      165             170             175
104 Ala Val Val Ser Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val
105      180             185             190
108 Leu Asp Leu Lys Asn Tyr Ile Asp Lys Gln Leu Leu Pro Ile Val Asn
109      195             200             205
112 Lys Gln Ser Cys Ser Ile Ser Asn Ile Glu Thr Val Ile Glu Phe Gln
113      210             215             220
116 Gln Lys Asn Asn Arg Leu Leu Glu Ile Thr Arg Glu Phe Ser Val Asn
117 225             230             235             240
120 Ala Gly Val Thr Thr Pro Val Ser Thr Tyr Met Leu Thr Asn Ser Glu
121      245             250             255
124 Leu Leu Ser Leu Ile Asn Asp Met Pro Ile Thr Asn Asp Gln Lys Lys
125      260             265             270
128 Leu Met Ser Asn Asn Val Gln Ile Val Arg Gln Gln Ser Tyr Ser Ile
129      275             280             285
132 Met Ser Ile Ile Lys Glu Glu Val Leu Ala Tyr Val Val Gln Leu Pro
133      290             295             300
136 Leu Tyr Gly Val Ile Asp Thr Pro Cys Trp Lys Leu His Thr Ser Pro
137 305             310             315             320
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141      325             330             335
144 Thr Asp Arg Gly Trp Tyr Cys Asp Asn Ala Gly Ser Val Ser Phe Phe
145      340             345             350
148 Pro Gln Ala Glu Thr Cys Lys Val Gln Ser Asn Arg Val Phe Cys Asp
149      355             360             365
152 Thr Met Asn Ser Leu Thr Leu Pro Ser Glu Ile Asn Leu Cys Asn Val
153      370             375             380
156 Asp Ile Phe Asn Pro Lys Tyr Asp Cys Lys Ile Met Thr Ser Lys Thr
157 385             390             395             400
160 Asp Val Ser Ser Ser Val Ile Thr Ser Leu Gly Ala Ile Val Ser Cys
161      405             410             415
164 Tyr Gly Lys Thr Lys Cys Thr Ala Ser Asn Lys Asn Arg Gly Ile Ile

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Input Set : A:\Sequence Listing.ST25.txt

Output Set: N:\CRF4\01192007\J575279.raw

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176 Lys Ser Leu Tyr Val Lys Gly Glu Pro Ile Ile Asn Phe Tyr Asp Pro
177 465          470          475          480
180 Leu Val Phe Pro Ser Asp Glu Phe Asp Ala Ser Ile Ser Gln Val Asn
181          485          490          495
184 Glu Lys Ile Asn Gln Ser Leu Ala Phe Ile Arg Lys Ser Asp Glu Leu
185          500          505          510
188 Leu His Asn Val Asn Ala Gly Lys Ser Thr Thr Asn Ile Met Ile Thr
189          515          520          525
192 Thr Ile Ile Ile Val Ile Ile Val Ile Leu Leu Ser Leu Ile Ala Val
193          530          535          540
196 Gly Leu Leu Leu Tyr Cys Lys Ala Arg Ser Thr Pro Val Thr Leu Ser
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216          20          25          30
219 Val Pro Ser Asn Tyr His Tyr Cys Pro Ser Ser Ser Asp Leu Asn Trp
220          35          40          45
223 His Asn Asp Leu Ile Gly Thr Ala Ile Gln Val Lys Met Pro Lys Ser
224          50          55          60
227 His Lys Ala Ile Gln Ala Asp Gly Trp Met Cys His Ala Ser Lys Trp
228 65          70          75          80
231 Val Thr Thr Cys Asp Phe Arg Trp Tyr Gly Pro Lys Tyr Ile Thr Gln
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240          115          120          125
243 Ser Cys Gly Tyr Ala Thr Val Thr Asp Ala Glu Ala Val Ile Val Gln
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247 Val Thr Pro His His Val Leu Val Asp Glu Tyr Thr Gly Glu Trp Val
248 145          150          155          160
251 Asp Ser Gln Phe Ile Asn Gly Lys Cys Ser Asn Tyr Ile Cys Pro Thr
252          165          170          175
255 Val His Asn Ser Thr Thr Trp His Ser Asp Tyr Lys Val Lys Gly Leu
256          180          185          190
259 Cys Asp Ser Asn Leu Ile Ser Met Asp Ile Thr Phe Phe Ser Glu Asp

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296          340          345          350
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307 Gly Pro Asn Gly Val Leu Arg Thr Ser Ser Gly Tyr Lys Phe Pro Leu
308 385          390          395          400
311 Tyr Met Ile Gly His Gly Met Leu Asp Ser Asp Leu His Leu Ser Ser
312          405          410          415
315 Lys Ala Gln Val Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln
316          420          425          430
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323 Asn Pro Ile Glu Leu Val Glu Gly Trp Phe Ser Ser Trp Lys Ser Ser
324          450          455          460
327 Ile Ala Ser Phe Phe Phe Ile Ile Gly Leu Ile Ile Gly Leu Phe Leu
328 465          470          475          480
331 Val Leu Arg Val Gly Ile His Leu Cys Ile Lys Leu Lys His Thr Lys
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VERIFICATION SUMMARY

DATE: 01/19/2007

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Input Set : A:\Sequence Listing.ST25.txt

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L:12 M:270 C: Current Application Number differs, Replaced Current Application No

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date